



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,385	10/20/2003	Muthurajah Sivabalan	CISCP838	4145
26541	7590	06/25/2007	EXAMINER	
Cindy S. Kaplan P.O. BOX 2448 SARATOGA, CA 95070			BELL, LOUIS W	
ART UNIT		PAPER NUMBER		
2609				
MAIL DATE		DELIVERY MODE		
06/25/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/689,385	SIVABALAN ET AL.	
Examiner	Art Unit		
Louis Bell	2909		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 20 October 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-22 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 20 October 2003 is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application

6) Other: ____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claim 1, 3, 11, 13, 21 and 22** is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. US 7,126,907 B2 to Carpini et al.

As to **claim 1**, Carpini discloses a method for operating a first node in a label switched network, said method comprising:

establishing a link bundle comprising a plurality of component links between said first node and a second node (*a communication network having of two switching routers, nodes A and B, with a plurality of communication paths extending between them, column 18 lines 13-18; Fig. 7*);

upon establishment of an LSP including said first node and said second node, selecting a first component link of said link bundle as a primary component link to assign to said LSP (*LSPs are established on the first communication path, Column 18 lines 29-30, LSP1 and LSP2 are placed on communication path from nodes A to B having intermediate routers 315 and 317; Fig. 7*);

selecting one or more component links of said link bundle other than said first component link as one or more secondary component links to assign to said LSP (*communication path four is selected as secondary communication path and it is assigned to the LSPs, column 19 lines 32-38; Fig. 7*); sending traffic of said LSP over said primary component link until a failure of said primary component link; and after failure of said primary component link, sending traffic of said LSP over said one or more secondary component links instead of said primary component link (*Traffic carried by LSP1 is sent over communication path fourth, the secondary path. The switching is done for restoration or traffic engineering as well as other reasons, which is due to failure, column 19 lines 38-54*).

As to **Claim 3**, the method of claim 1 wherein said one or more secondary component links comprise exactly one secondary component link (*the fourth communication path is selected as secondary communication path for LSP1, column 19, lines 31-38*).

As to **Claim 11**, is rejected similarly to claim 1. As for the computer program, the routing device 91 in Fig. 4 uses a computer program.

As to **Claim 13**, is rejected similarly to claim 3.

As to **Claim 21 and 22** are rejected similarly to claim 1. As for the network device and apparatus, Carpinis shows a router, which is an apparatus and a network device, which contains a processor for controlling the routing device and memory devices for storing incoming label (column 5 lines 58-65; Fig. 2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claim 2 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,126,907 B2 to *Carpini* et al. in view of *Kompella* et al., "Link Bundle in MPLS Traffic Engineering".

As to **claim 2**, *Carpini* disclose a link bundle as recited in the parent claim.

Carpini does not expressly disclose, "information about aggregate characteristics of said link bundle is advertised by said first node to other nodes but information about characteristics of individual ones of said plurality of component links is not advertised."

Kompella discloses that the information about the bundled link is flooded, but pieces of information about the component links are not advertised (page 4, 2nd paragraph).

Carpini and *Kompella* are analogous art because they are from the same field of endeavor with respect to MPLS network for forwarding packets using LSPs.

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to advertise only the bundled links' information to improve routing scalability by reducing the information handled by the routing protocol (page 2 paragraph 7 of Kompella).

As to **Claim 12**, is rejected similarly to claim 2.

5. **Claim 4, 5, 6, 7, 8, 9, 14, 15, 16, 17, 18, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,126,907 B2 to *Carpini* et al. ("Carpini") in view of U.S. Pub. No. 2004/0125745 A9 to Dang et al. ("Dang").

As to **Claim 4**, Carpinis discloses the establishment of a secondary path.

Carpini does not expressly disclose, " in advance of said failure, bandwidth for use by said LSP is allocated on said exactly one secondary component link responsive to a bandwidth requirement of said LSP."

Dang discloses the establishment of an alternate fully constrained path prior to the occurrence of a failure (paragraph 37 lines 8-15).

Carpini and *Dang* are analogous art because they are from the same field of endeavor with respect re-routing messages through a computer network.

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to allocated bandwidth to a secondary connection to reduce large down time and thus avoid violation of service level agreement (paragraph 4).

As to **Claim 5**, Carpini discloses the establishment of a secondary path.

Carpini does not expressly disclose, "while sending traffic of said LSP over said exactly one secondary component link, designating said exactly one secondary component link as a new primary component link and selecting a new secondary component link responsive to a bandwidth requirement of said LSP."

Dang discloses the establishment of another connection to take over the alternate connection (paragraph 37 lines 14-21).

Carpini and *Dang* are analogous art because they are from the same field of endeavor with respect re-routing messages through a computer network.

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to establish a backup connection to reduce large down time and thus avoid violation of service level agreement (paragraph 4).

As to **Claim 6**, Carpini discloses the establishment of a secondary path.

Carpini does not expressly disclose, "no bandwidth is allocated on said one or more secondary component links for use by said LSP."

Dang discloses the establishment of a secondary path with no guaranty bandwidth (paragraph 34).

Carpini and *Dang* are analogous art because they are from the same field of endeavor with respect re-routing messages through a computer network.

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to not allocated bandwidth to a secondary connection to provide the best effort service (paragraph 34).

As to **Claim 7**, Carpini discloses the establishment of a secondary path.

Carpini does not expressly disclose, "assigning lower priority to traffic of said LSP compared to other traffic carried by said one or more secondary component links."

Dang discloses the establishment of priority of connections into high priority and low priority connections (paragraph 37 lines 2-8).

Carpini and *Dang* are analogous art because they are from the same field of endeavor with respect re-routing messages through a computer network.

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to assign a lower priority to rerouted traffic to an LSP to not disturb the traffic flow carry by different LSP.

As to **Claim 8**, Carpini discloses the establishment of a secondary path.

Carpini does not explicitly disclose a second switching of traffic from an already established secondary path to a new established primary path "while sending traffic of said LSP over said one or more secondary component links, selecting a component link of said link bundle as a new primary component link; and thereafter sending traffic of said LSP over said new primary component link".

Dang discloses the switching of low priority traffic to a reduced constrained path and after full constrains is established, switching the low priority traffic to a full constrained connection (paragraph 40 lines 7-13).

Carpini and *Dang* are analogous art because they are from the same field of endeavor with respect re-routing messages through a computer network.

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to switch low priority traffic from a low constrained path to a full constrained path to provide instant connectivity to all traffic and fully constrained connectivity to high priority traffic (paragraph 41).

As to **Claim 9**, Carpini discloses the establishment of a secondary path out of a group of path (*communication path four is selected as secondary communication path and it is assigned to the LSPs, column 19 lines 32-38, Fig. 7*).

As to **Claim 14**, is rejected similarly to claim 4.

As to **Claim 15**, is rejected similarly to claim 5.

As to **Claim 16**, is rejected similarly to claim 6.

As to **Claim 17**, is rejected similarly to claim 7.

As to **Claim 18**, is rejected similarly to claim 8.

As to **Claim 19**, is rejected similarly to claim 9.

6. **Claim 10 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,126,907 B2 to *Carpini* et al. ("Carpini") in view of U.S. Pub. No. 2004/0125745 A9 to Dang et al. ("Dang") in further view of U.S. Pub. No. 2004/0052207 A1 to Charny et al. ("Cherny").

As to **Claim 10**, Carpini discloses the establishment of a primary communication path for LSPs.

Carpini and Dang do not expressly disclose "upon failure to identify a component link having sufficient available bandwidth to server as a new primary component link, signaling a head-end of said LSP to reroute said LSP"

Charny discloses notification to the head-end of the LSP of failure and signaling to the head-end to reroute the LSP (paragraph 32, lines 1-4).

Carpini, Dang and Cherny are analogous art because they are from the same field of endeavor with respect re-routing messages through a computer network.

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to signal to the head-end of a LSP to find a back-up path to reroute traffic to that LSP.

As to **Claim 20**, is rejected similarly to claim 10.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis Bell whose telephone number is 571-270-3312. The examiner can normally be reached on Monday-Friday 7:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on 571-272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LB/



6/14/07

DERRICK W. FERRIS
PRIMARY PATENT EXAMINER